

**WHAT IS CLAIMED IS:**

- 1 1. A method for dynamic spreadsheet reporting, comprising:
  - 2 a) providing an electronic spreadsheet having a plurality of cells that are arrayed
  - 3 in a defined number of columns and rows;
  - 4 b) providing a database in communication with said electronic spreadsheet;
  - 5 c) defining an expansion formula in at least one of said plurality of cells, said
  - 6 expansion formula functioning to control retrieval of data from said database
  - 7 and to automatically vary at least one of the defined number of said columns
  - 8 and rows to accommodate said data retrieval.
- 9 2. A method according to claim 1, wherein said electronic spreadsheet is supported
- 10 by a spreadsheet application that provides formatting and calculation
- 11 functionalities to said electronic spreadsheet.
- 12 3. A method according to claim 2, wherein said spreadsheet application operatively
- 13 resides on a computer system selected from the group consisting of a stand-alone
- 14 client and a networked client.
- 15 4. A method according to claim 2, wherein said spreadsheet application is a
- 16 collaborative spreadsheet application that operates across a plurality of networked
- 17 computers.
- 18 5. A method according to claim 1, wherein said data includes at least one dimension
- 19 member, and wherein said at least one dimension member is identified by at least
- 20 one parameter set forth in said expansion formula.
- 21 6. A method according to claim 5, wherein said at least one dimension member is a
- 22 data category.
- 23 7. A method according to claim 6, wherein said data category is selected from the
- 24 group consisting of time periods, departments, account types, account categories,
- 25 product types, product categories and combinations thereof.
- 26 8. A method according to claim 5, further comprising:
  - 27 d) automatically updating said electronic spreadsheet to include a new dimension
  - 28 member upon introduction of said new dimension member to said database,

- 29 provided the definition of said expansion formula calls for retrieval of said new  
30 dimension member from said database.
- 31 9. A method according to claim 1, wherein in automatically varying at least one of  
32 the defined number of said columns and rows, said expansion formula does not  
33 impair operability or functionality of said electronic spreadsheet external to said  
34 data retrieval accommodation.
- 35 10. A method according to claim 1, further comprising defining a member list in said  
36 database, said member list including hierarchical list of members within a given  
37 category of said data.
- 38 11. A method according to claim 1, wherein said expansion formula utilizes at least  
39 one function selected from the group consisting of an EVEXP function, EVNXP  
40 function, an EvENE function, an EvLST function, an EvSET function, an EvPXR  
41 function, and combinations thereof.
- 42 12. A method according to claim 11, wherein said expansion formula utilizes at least  
43 two nested functions.
- 44 13. A method according to claim 1, further comprising:  
45 d) recalculating said electronic spreadsheet based on data retrieval from said  
46 database controlled by said expansion formula, and  
47 e) building a cache in a memory for said expansion formula.
- 48 14. A method according to claim 13, further comprising:  
49 f) expanding said electronic spreadsheet by querying said database for a list of  
50 members as defined in expansion parameters included in said expansion  
51 formula,  
52 g) adjusting the number of cells in a key range and a data range associated with  
53 said expansion formula as necessary to accommodate said list of members,  
54 h) populating said key range with members from said list of members, and  
55 i) copying formulas from at least one of said plurality of cells to an appropriate  
56 newly inserted cell to fill an entire data range.
- 57 15. A method according to claim 14, further comprising:

- 58 j) deleting said cache in said memory; and  
59 k) recalculating said electronic spreadsheet in said expanded electronic  
60 spreadsheet.
- 61 16. A system for supporting dynamic spreadsheet reporting, comprising a client that  
62 includes a processor and associated data storage containing at least one database,  
63 said processor adapted to process programmatic instructions associated with an  
64 electronic spreadsheet having a plurality of cells that are arrayed in a defined  
65 number of columns and rows; said programmatic instructions including at least  
66 one expansion formula inserted into in at least one of said plurality of cells, said  
67 expansion formula functioning to control retrieval of data from said at least one  
68 database and to automatically vary at least one of the defined number of said  
69 columns and rows to accommodate said data retrieval.
- 70 17. A system according to claim 16, wherein said programmatic instructions provides  
71 formatting and calculation functionalities to said electronic spreadsheet.
- 72 18. A system according to claim 16, wherein said client communicates with a server  
73 across a network, and wherein said data storage is associated with said server.
- 74 19. A system according to claim 16, wherein said spreadsheet application is a  
75 collaborative spreadsheet application that operates across a plurality of networked  
76 computers.
- 77 20. A system according to claim 16, wherein said data includes at least one dimension  
78 member, and wherein said at least one dimension member is identified by at least  
79 one parameter set forth in said expansion formula.
- 80 21. A system according to claim 16, wherein said programmatic instructions affect  
81 automatic updating of said electronic spreadsheet to include a new dimension  
82 member upon introduction of said new dimension member to said database,  
83 provided the definition of said expansion formula calls for retrieval of said new  
84 dimension member from said database.
- 85 22. A system according to claim 16, wherein in automatically varying at least one of  
86 the defined number of said columns and rows, processing of said expansion

- 87            formula by said processor does not impair operability or functionality of said  
88            electronic spreadsheet external to said data retrieval accommodation.
- 89    23.    A system according to claim 16, wherein in processing said expansion formula,  
90            said processor processes at least one function selected from the group consisting  
91            of an EVEXP function, EVNXP function, an EvENE function, an EvLST  
92            function, an EvSET function, an EvPXR function, and combinations thereof.
- 93    24.    A system according to claim 16, wherein in processing said expansion formula,  
94            said processor processes at least two nested functions.

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